

Appl. No. : 10/603,485
Filed : June 25, 2003

REMARKS

Claim 1 has been amended to clarify the invention. Claims 9 and 10 have been added. Support can be found in Figs. 4-7, for example. No new matter has been added. Applicant respectfully requests entry of the amendments and reconsideration of the application in view of the amendments and the following remarks.

Rejection of Claims 1-5 and 8 Under 35 U.S.C. § 103

Claims 1-5 and 8 have been rejected under 35 U.S.C. § 103(a) as being unpatentable over the applicant's prior art figures 1 and 2A in view of Ebihara. Claim 1 is independent and amended for clarification.

Claim 1 has been clarified to recite that the notched portion is disposed exclusively in the holding region and separated from the vibrating region so as to effectively suppress strains that would otherwise be caused by difference in thermal expansion coefficients between the casing and the crystal blank.

In contrast, in Ebihara, the crystal unit uses a crystal blank of arm vibrating mode, i.e., the vibrating region spreads over the entire surface of the crystal blank if the notched portion is not provided (see Figs. 2-4). In Ebihara, the notched portion defines and is in contact with the vibrating region. Ebihara does not consider difference in thermal expansion coefficients between the casing and the crystal blank. Ebihara does not teach or suggest providing a notched portion in the holding region separated from the vibrating region. Thus, even if Ebihara and the applicant's prior art figures 1 and 2A are combined, the teachings could not lead to Claim 1.

Claim 1 and the dependent claims could not be obvious over the references, and Applicant respectfully requests withdrawal of this rejection.

Rejection of Claims 1-5, 7, and 8 Under 35 U.S.C. § 103

Claims 1-5, 7, and 8 have been rejected under 35 U.S.C. § 103(a) as being unpatentable over the applicant's prior art figures 1 and 2A in view of Murata. Claim 1 is independent and amended for clarification.

As discussed above, Claim 1 has been clarified to recite that the notched portion is disposed exclusively in the holding region and separated from the vibrating region so as to

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effectively suppress strains that would otherwise be caused by difference in thermal expansion coefficients between the casing and the crystal blank.

In contrast, in Murata, a piezoelectric blank is held at a point of vibration of the blank. Therefore, the notched portion must contact the vibrating region. The notched portion of Claim 1 is not disposed at a node of vibration because no node point is located inside the holding region. Thus, even if Murata and the applicant's prior art figures 1 and 2A are combined, the teachings could not lead to Claim 1.

Claim 1 and the dependent claims could not be obvious over the references, and Applicant respectfully requests withdrawal of this rejection.

Rejection of Claim 6 Under 35 U.S.C. § 103

Claim 6 has been rejected under 35 U.S.C. § 103(a) as being unpatentable over the combination of the applicant's prior art figures 1 and 2A and of Ebihara in view of Nishitani. Claim 6 depends from Claim 1, and Nishitani is irrelevant to the features of Claim 1 discussed above. Thus, even if Nishitani, the applicant's prior art figures 1 and 2A, and Ebihara are combined, the teachings could not lead to Claim 1 or Claim 6.

Claim 6 could not be obvious over the references, and Applicant respectfully requests withdrawal of this rejection.

New Claims 9 and 10

Claims 9 and 10 have been added. Claim 9 is independent and recites that a notched portion is disposed between the fixed side and the vibrating region in closer proximity to the fixed side than to the vibrating region. Because no prior art reference teaches or suggests the above features. Claim 10 depends from Claim 10. It is respectfully submitted that Claims 9 and 10 are patentable over the references.

CONCLUSION

In light of the Applicant's amendments to the claims and the foregoing Remarks, it is respectfully submitted that the present application is in condition for allowance. Should the Examiner have any remaining concerns which might prevent the prompt allowance of the

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application, the Examiner is respectfully invited to contact the undersigned at the telephone number appearing below.

Please charge any additional fees, including any fees for additional extension of time, or credit overpayment to Deposit Account No. 11-1410.

Respectfully submitted,

KNOBBE, MARTENS, OLSON & BEAR, LLP

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